IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	§	
Mike Musgrave	§	
Serial No.: 10/827,185	§	Group Art Unit: 1796
	§	
Confirmation No.: 2436	§	
	§	
Filed: April 19, 2004	§	Examiner: Rip A. Lee
	§	
For: A Random Copolymer-Impact Copolymer Blend	§	Atty. Docket No.: COS-889
	§	
	§	

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Honorable Commissioner:

APPEAL BRIEF

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 1796 dated February 7, 2008, finally rejecting claims 1, 3-9, 11-18, 20-24, and 26-34.

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Real Party in Interest

The present application has been assigned to Fina Technology Inc., P.O. Box 674412, Houston, Texas 77267.

Related Appeals and Interferences

Appellants assert that no other appeals, interferences or judicial proceedings are known to the Appellants, the Appellants' legal representative or Assignee that will directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1, 3-9, 11-18, 20-24, and 26-34 are pending in the application. Claims 2, 10, 19, and 25 have been canceled. Claims 1, 3-9, 11-18, 20-24, and 26-34 stand rejected under 35 U.S.C. § 103(a). The rejection of the pending claims is appealed. The pending claims are shown in the attached Appendix A.

Status of Amendments

No amendments to the claims were made in response to the Final Office Action. For purposes of appeal, the claims as listed in the response to the Final Office Action were entered and an explanation of how the claims were rejected was provided.

Summary of Claimed Subject Matter

Independent claim 1 recites a blend consisting essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and a random copolymer comprising the balance of the blend. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. The blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), [0019] (page 10, lines 12-21), and [0025] (page 13, lines 4-7).

Independent claim 12 recites a process for forming a resin that comprises providing a blend consisting essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and an ethylene-propylene random copolymer comprising the balance of the blend. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. The blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), [0019] (page 10, lines 12-21), [0021] (page 11, lines 9-16), and [0025] (page 13, lines 4-7).

Independent claim 21 recites a method for preparing an article of manufacture that comprises preparing a resin that comprises a blend consisting essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a

clarifying agent; and a random copolymer comprising the balance of the blend; and forming an article comprising said resin. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. The blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), [0019] (page 10, lines 12-21), [0024] (page 12, lines 12-23), and [0025] (page 13, lines 4-7).

Independent claim 27 recites an article of manufacture that comprises a resin that comprises a blend consisting essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and a random copolymer comprising the balance of the blend. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. The blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), [0019] (page 10, lines 12-21), and [0025] (page 12, line 24, to page 13, lines 1-14).

Independent claim 31 recites a blend that consists essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and a random copolymer comprising a balance of the blend. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10) and [0016] (page 9, lines

2-6).

Independent claim 32 recites a process for forming a resin that comprises providing a blend that consists essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and an ethylene-propylene random copolymer that comprises the balance of the blend. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. *See*, ~~specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6),~~ and [0021] (page 11, lines 9-16).

Independent claim 33 recites a method for preparing an article of manufacture that comprises preparing a resin that comprises a blend that consists essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and a random copolymer that comprises the balance of the blend; and forming the article. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), and [0024] (page 12, lines 12-23).

Independent claim 34 recites an article of manufacture that comprises a resin that comprises a blend that consists essentially of about 20 wt% to about 60 wt% of a polypropylene impact copolymer; about 300 to about 4000 ppm of a clarifying agent; and a random copolymer that comprises the balance of the blend. The random copolymer comprises from about 0.15 wt% to about 4.0 wt% ethylene. *See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), and [0025] (page 12, line 24, to page 13, lines 1-14).

The claimed invention provides for a blend of an impact copolymer, a clarifying agent, and a specific random copolymer that results in a resin having acceptable clarity and low temperature impact resistance. *See*, specification, at least at paragraph [0005] (page 3, lines 3-5). The invention also provides for a process of forming such resin from the blend, a method of preparing an article from the resin, and an article made from the resin. *See*, specification, at least at paragraph [0006] (page 4, lines 1-9).

Grounds of Rejection to be Reviewed on Appeal

1. The rejection of claims 1, 3-9, 11-18, 20-24, and 26-34 under 35 U.S.C. § 103(a) as being unpatentable over Su et al. (U.S. 7,078,463) in view of McCullough et al. (U.S. 6,015,854).

Arguments

I. THE EXAMINER ERRED IN REJECTING CLAIMS 1, 3-9, 11-18, 20-24, AND 26-34 UNDER 35 U.S.C. §103(A) AS BEING UNPATENTABLE OVER *SU* ET AL. IN VIEW OF *MCCULLOUGH* ET AL.

Su teaches a biaxially oriented polyolefin multiplayer film having high oxygen transmission that comprises a polyolefin blended base layer and at least one outer layer. (*Su*, col. 1, lines 7-11). Specifically, *Su* teaches films that have a core layer that comprises up to about 50 wt% isotactic polypropylene-containing impact copolymer, about 10 to 70 wt% of an alpha olefin/polypropylene copolymer-containing thermoplastic olefin and 10 to 70 wt% of an isotactic propylene homopolymer. (*Su*, col. 2, lines 43-49). The third component may be a minirandom copolymer having from 0.2-0.8% ethylene. (*Su*, col. 6, lines 28-30).

McCullough teaches polypropylene impact copolymer compositions having improved clarity. (*McCullough*, col. 1, lines 6-7).

The Examiner states that *Su* does not describe the additives, but indicate that "the inventors indicate that various modifications are readily apparent to those skilled in the art." (Final Office Action, dated February 7, 2008, page 2, second to last paragraph). Additionally, the Examiner states that one of ordinary skill in the art would have used the clarifying agent disclosed in *McCullough* in the film composition of *Su*. (Final Office Action, dated February 7, 2008, page 2, last paragraph). The Examiner also states that the physical properties, which are not disclosed in the prior art, would have been the same. (Final Office Action, dated February 7, 2008, page 3, first paragraph).

"To establish a prima facie case of obviousness . . . there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." *See*, MPEP §2142.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. *See*, MPEP §706.02(j); *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Supreme Court recently rejected a formalistic and rigid application of the teaching, suggestion, or motivation test as an exclusive test in the obviousness inquiry, it nevertheless made clear that an invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). The Supreme Court further stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine elements in the way the claimed new invention does." *Id.*

Appellants respectfully argue that there is no motivation to combine the references, nor do they provide a prima facie case of obviousness. First, the references relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *See, Karsten Mfg. Corp. v. Cleveland Gulf Co.*, 242 F.3d 1376, 1385 (Fed. Cir. 2001). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *See, Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209 (Fed. Cir. 1991).

The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. *See, In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984).

Particularly, Appellants respectfully argue that *Su* discloses a resin blend that comprises three different polymers, an impact copolymer, an alpha-olefin propylene random copolymer, and a minirandom isotactic polypropylene-ethylene copolymer. The polymers, which comprise *Su*, are polymers which all inherently have haze or clarity issues. (*See Su* at col. 5, lines 38-67 to col. 6, lines 1-34.).

Su does not disclose the use of a clarifying agent at all. The Examiner has not indicated anything within *Su* that would lead specifically to the use of a clarifying agent. *Su* discloses minimal haze values without using a clarifying agent, which is indicative of the Examples. (*See Su* at col. 4, line 39 and Table1). *Su* is able to attain these "minimal" haze values without a clarifying agent because of the thickness of the films that *Su* is interested in producing. The films in *Su* are at a thickness of 0.5 to 0.6 mil, which is

significantly thinner than the 22 mil thick sheet in which the haze values of the present claims are based upon. (See Su at col. 8, lines 57-62.) A film of 0.5 to 0.6 mil thickness is equivalent to 0.0127 millimeters to 0.01524 millimeters, which is paper thin and would have "minimal" haze values even without a clarifying agent. (See Su at col. 4, line 39 and Table 1). One objective of *Su* is to attain high oxygen transmission, which would be attained with thinner films. (*Su*, col. 1, lines 10-11). Preparing a thicker film would frustrate the objective *Su* teaches. One of ordinary skill in the art would not have been motivated to modify *Su* to prepare a thicker film.

McCullough discloses the use of a clarifying agent with an impact copolymer, but does not disclose a blend of an impact copolymer with a random copolymer. (*See McCullough*, col. 1, lines 6-7). Additionally, *McCullough* states that random copolymers "do not have the necessary physical properties for applications where impact copolymers are used normally", such as applications requiring high impact strength. (*McCullough*, col. 1, lines 24-26). Therefore, *McCullough* teaches away from the presently claimed invention.

There is no motivation to combine *Su* and *McCullough* because *Su* has attained the haze values desired without the use of a clarifying agent. Therefore, there is no suggestion nor motivation to combine the references. These references merely demonstrate that elements of the invention were, independently, known in the prior art.

The presently claimed invention consists essentially of a polypropylene impact copolymer, a random copolymer, and an amount of clarifier, resulting in a blend, which when extruded into a sheet has specific claimed physical properties, particularly clarity and energy. (*See*, specification, at least at paragraphs [0008] (page 5, lines 1-10), [0016] (page 9, lines 2-6), [0019] (page 10, lines 12-21), and [0025] (page 13, lines 4-7)). The basic and novel characteristics of the present invention are the blend of these three components results in a particular clarity of the resin resulting from this blend. The use of an additional, inherently hazy, material would impact the overall clarity of a blend, and therefore would not be encouraged by the present claims.

Appellants submit that there is no motivation (nor a reasonable expectation of success) to modify or combine the teachings of *Su* with *McCullough* to obtain the blend, the process, the method, or the article as recited in the pending claims.

Based on such arguments, Appellants respectfully request reversal of the rejection.

Conclusion

In conclusion, the references of record do not teach, show or suggest the blends, the processes, the methods, or the articles as recited in the pending claims. Thus, Appellants respectfully request reversal of the rejections of claims 1, 3-9, 11-18, 20-24, and 26-34.

Respectfully submitted,

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Appendix A - *Pending Claims*

1. A blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

a random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend, wherein the blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C.

3. The blend as recited in Claim 1 wherein said blend, when formed into a resin and extruded into a about 22 mil thick sheet, has a Haze of less than about 64% and a Energy to Maximum Load / Energy After Maximum Load ratio of at least about 4 at about -29°C.

4. The blend as recited in Claim 1 wherein said blend comprises about 30 wt% to about 50 wt% of said impact copolymer, about 1700 and 2300 ppm of said clarifying agent, and balance said random copolymer.

5. The blend as recited in Claim 1 wherein said blend comprises about 30 wt% of said impact copolymer, about 300 to about 4000 ppm of said clarifying agent, and balance of said random copolymer.

6. The blend as recited in Claim 1 wherein said impact copolymer is nucleator free, has a melt flow between about 0.1 g/10 min and about 5 g/10_min and has a crystalline composition comprising a homopolymer, or copolymer containing less than about 5 wt%

of a comonomer, and an amorphous rubber composition comprising about 7 to about 22 weight% of said impact copolymer, said amorphous rubber having an ethylene:propylene component ratio between about 30:70 to about 50:50 by weight.

7. The blend as recited in Claim 1 wherein said random copolymer has a melt flow between about 0.1 g/10 min and about 10 g/10 min and comprises a propylene copolymer containing ethylene groups randomly inserted between propylene groups, said ethylene groups comprising from about 0.2 wt% to about 4 wt% of said random copolymer.

8. The blend as recited in Claim 1 wherein said clarifying agent is a dibenzylidene sorbitol containing a substituent having 20 carbons or less selected from the group consisting of:

alkyl;

alkoxy; and

halogen.

9. The blend as recited in Claim 1 wherein said random copolymer is a metallocene catalyzed ethylene propylene copolymer.

11. The blend as recited in Claim 1 wherein said impact copolymer is a metallocene catalyzed impact copolymer.

12. A process for forming a resin comprising:

providing a blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

an ethylene-propylene random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend, wherein the blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C.

13. The process as recited in Claim 12, further including melting, mixing said blend to form a resin and pumping said blend to form a sheet or parison comprising said resin.

14. The process as recited in Claim 12 wherein said blend comprises said impact copolymer and a clarified random copolymer comprising said random copolymer containing said clarifying agent.

15. The process as recited in Claim 13 wherein said mixing further includes adjusting said clarifying agent sufficient to provide a concentration of between about 1700 and 2300 ppm.

16. The process as recited in Claim 13 wherein said melting comprises heating said blend to a temperature of between 176°C and about 238°C.

17. The process as recited in Claim 13 wherein said forming said sheet comprises heating said resin to a temperature of between about 176°C and about 238°C and extruding said resin.

18. The process as recited in Claim 12 wherein providing a blend includes providing a blend wherein said random copolymer is a metallocene catalyzed ethylene propylene copolymer.

20. The process as recited in Claim 12 wherein providing a blend includes providing a blend wherein said impact copolymer is a metallocene catalyzed impact copolymer.

21. A method for preparing an article of manufacture comprising:

preparing a resin comprising a blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

a random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend, wherein the blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C; and

forming an article comprising said resin.

22. The method as recited in Claim 21 wherein said forming comprises a fabrication process selected from the group consisting of:

injection molding;

blow molding; and

extrusion.

23. The method as recited in Claim 21 wherein said article formed is a lid or a container used in low temperature packaging applications.

24. The method as recited in Claim 21 wherein preparing a resin includes preparing a resin wherein said random copolymer is a metallocene catalyzed ethylene propylene copolymer.

26. The method as recited in Claim 21 wherein preparing a resin includes preparing a resin wherein said impact copolymer is a metallocene catalyzed impact copolymer.

27. An article of manufacture comprising:

a resin comprising a blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

a random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend, wherein the blend, when formed into a resin and extruded into an about 22 mil thick sheet, has a Haze of less than about 77% and an Energy to Maximum Load/Energy After Maximum Load ratio of at least about 1.6 at about -29 °C.

28. The article as recited in Claim 27 wherein said article has a Notched Izod of at least about 64 J/m at 23°C.

29. The article as recited in Claim 27 wherein said article has a Notched Izod of at least about 138 J/m at 23°C.

30. The article as recited in Claim 27 wherein said article has a Gardner Mean Failure Energy of at least about 7.9 J at 23°C.

31. A blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

a random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend.

32. A process for forming a resin comprising:

providing a blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

an ethylene-propylene random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend.

33. A method for preparing an article of manufacture comprising:

preparing a resin comprising a blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

a random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend; and

forming an article comprising said resin.

34. An article of manufacture comprising:

a resin comprising a blend consisting essentially of:

about 20 wt% to about 60 wt% of a polypropylene impact copolymer;

about 300 to about 4000 ppm of a clarifying agent; and

a random copolymer, comprising from about 0.15 wt% to about 4.0 wt% ethylene, comprising a balance of said blend.

Appendix B - *Evidence*

1. Su et al., U.S. Patent No. 7,078,463.
2. McCullough et al., U.S. Patent No. 6,015,854.
3. MPEP §2142.
4. MPEP §706.02(j).
5. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).
6. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007).
7. *Karsten Mfg. Corp. v. Cleveland Gulf Co.*, 242 F.3d 1376 (Fed. Cir. 2001).
8. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200 (Fed. Cir. 1991).
9. *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984).

Appendix C - *Related Proceedings*

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